

Message Text

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TO AMEMBASSY OTTAWA PRIORITY

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E.O. 11652: N/A

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SLBJECT: CLEARANCE REQUEST FOR NASA AIRCRAFT

1. SUMMARY: NASA/AMES RESEARCH CENTER PLANS SERIES OF FLIGHTS 4-18 OCTOBER 1976 TO OBTAIN DATA CONCERNING ROLE ATMOSPHERIC NITROUS OXIDE AND HALOCARBONS IN REGULATING STRATOSPHERIC OZONE. PROJECT SPONSORED BY NASA UPPER ATMOSPHERIC RESEARCH OFFICE IN SUPPORT PRINCIPAL INVESTIGATOR DR. REI RASMUSSEN, WASHINGTON STATE UNIVERSITY. PROPOSED FLIGHT PLAN OF NASA LEAR JET 705 EXTENDS FROM YELLOWKNIFE, CANADA, TO GUADALAJARA, MEXICO. AIRCRAFT UNCLASSIFIED

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NOT EQUIPPED WITH PHOTOGRAPHIC OR OTHER DOWNWARD LOOKING

SENSORS. REQUEST APPROPRIATE CLEARANCES.

2. MISSION SCIENTIFIC OBJECTIVE TO MEASURE SPATIAL AND TEMPORAL DISTRIBUTION OF COMPOUNDS IN TROPOSPHERE AND LOWER STRATOSPHERE IN SUFFICIENT SELECTED LOCATIONS U.S., CANADA, AND MEXICO TO CONTRIBUTE TO PICTURE GLOBAL DISTRIBUTION OF NITROUS OXIDE. CONCENTRATION MEASUREMENTS CONSIDERED EXTREMELY IMPORTANT SINCE INCREASE IN NITROUS OXIDE PRODUCES CORRESPONDING DECREASE IN TOTAL OZONE

LAYER. CHANGES IN STRATOSPHERIC OZONE ARE BELIEVED RELATED TO CLIMATIC CHANGES AND ULTRA VIOLET FLUX ON EARTH'S SURFACE.

3. MEASUREMENTS WILL INCLUDE LATITUDINAL VARIATIONS, DETERMINATION OF POSSIBLE DIFFERENCES BETWEEN MARINE AND CONTINENTAL NITROUS OXIDE CONCENTRATIONS, VERTICAL PROFILES IN TROPOSPHERE AND LOWER STRATOSPHERE, AND CONCURRENT MEASUREMENTS OF FLUOROCARBONS AND OTHER MAJOR HALOGENATED HYDROCARBONS.

4. AIRCRAFT INSTRUMENTATION WILL INCLUDE OUT-BOARD AIR PROBE FOR INFLIGHT SAMPLING, LOVELOCK ELECTRON-CAPTURE GAS CHROMATOGRAPH FOR INFLIGHT MEASUREMENTS, DASIBI OZONE MONITOR, AND SUPPORTING ELECTRONICS INCLUDING RECORDERS AND INVERTERS.

5. TENTATIVE FLIGHT PLAN CALLS FOR SERIES OF NINE FLYING LEGS, INTERSPERSED WITH SEVEN VERTICAL PROFILES, FLOWN BETWEEN 70 DEGREES NORTH AND 20 DEGREES NORTH LATITUDE. VERTICAL PROFILES WILL EXTEND FROM BELOW MIXING LAYER (500 TO 1500 METERS) UP TO LEAR JET OPERATION CEILING (13,500 METERS).

6. ATMOSPHERIC DATA COLLECTION OVER NORTHERN HEMISPHERE CONTINENTAL LAND MASS NEEDED TO AUGMENT JUNE 1976 FLIGHT PROFILES MADE FOR NITROUS OXIDE AND RELATED HALOCARBONS OVER PACIFIC OCEAN (FROM 80 DEGREES NORTH LATITUDE TO 60 DEGREES SOUTH LATITUDE). PROPOSED FLIGHT LINES WILL ALLOW OBSERVATION OF ATMOSPHERIC CONCENTRATIONS OVER UNCLASSIFIED

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NORTHERN TUNDRA, AND SOUTH OVER MIXED FOREST, PRAIRIE, AND DESERT AREAS TO UPPER LIMIT INTERTROPICAL CONVERSION ZONE DIVIDING NORTHERN AND SOUTHERN HEMISPHERE. CHARACTERIZATION OF CONCENTRATIONS OVER BOTH LAND AND WATER MASS ESSENTIAL TO UNDERSTANDING OF NITROUS OXIDE EFFECT ON AND POTENTIAL THREAT TO OZONE LAYER.

7. DATA COLLECTED AND RESEARCH RESULTS WILL BE PUBLICLY

AVAILABLE. INTERESTED GOVERNMENT REPRESENTATIVES AND SCIENTISTS WELCOME TO INSPECT AIRCRAFT AND EQUIPMENT AND DISCUSS PROGRAM WITH CREW PERSONNEL.

8. AIRCRAFT IS NASA OWNED AND OPERATED PUBLIC LAW GATES-LEAR JET MODEL 24B; REGISTRATION NUMBER N 705 NA; CALL SIGN NASA 705.

9. TENTATIVE FLIGHT SCHEDULE:

- ARRIVE YELLOWKNIFE AIRPORT, CANADA APPROX. OCT 5 (DATA FLIGHT FROM PULLMAN, WASHINGTON, USA)

- STAGE DATA FLIGHT FROM YELLOWKNIFE APPROX. OCT 6 TO 70 DEGREES NORTH LATITUDE BETWEEN 110 AND 130 NORTH LONGITUDE. REFUEL AND LEAVE YELLOWKNIFE.

- ARRIVE WINNIPEG INTERNATIONAL AIRPORT APPROX. OCT 6 FOR REFUELING ONLY (DATA FLIGHT DURING TRANSIT TO USA).

- LEAVE PALESTINE, TEXAS, USA (DATA APPROX. OCT 8 FLIGHT LOOPING OVER GULF OF MEXICO AND ENTERING MEXICAN AIR SPACE AT APPROX. 25 DEGREES NORTH LATITUDE: PURPOSE TO COMPARE WITH COMPARABLE DATA OBTAINED OVER PACIFIC OCEAN).

- ARRIVE DON MIGUEL HIDALGO Y COSTILLA APPROX. OCT 8 INTERNATIONAL AIRPORT, GUADALAJARA, MEXICO.

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- REST PERIOD FOR CREW, REFUEL, AND APPROX. OCT 9 SERVICE AIRCRAFT. AVAILABLE FOR INSPECTION BY GOM REPRESENTATIVES IF DESIRED.

- LEAVE GUADALAJARA FOR PHOENIX, APPROX. OCT 10 ARIZONA, USA (DATA FLIGHT IN TRANSIT).

8. PILOTS WILL FILE NORMAL INTERNATIONAL FLIGHT PLANS.

9. ALL PERSONNEL ACCOMPANYING FLIGHT U.S. CITIZENS. ONE GROUND CREW MEMBER MAY FLY COMMERCIAL AIR YELLOW-KNIFE AND GUADALAJARA TO ASSIST AIRCRAFT SERVICING. PERSONNEL ARE:

- GLEN STINNET - NASA COMMAND PILOT

- CHARLES MATTRAW - NASA PILOT (SUBSTITUTION MAY BE REQUIRED DEPENDING ON PILOT'S AVAILABILITY).

- DAVID PIEROTTI - CO-INVESTIGATOR, WASHINGTON STATE UNIVERSITY (OR JOSEPH KRASNEC, CHIEF PROJECT ENGINEER, WASHINGTON STATE UNIVERSITY), AND

- CALVIN KAHL - GROUND CREW MAINTENANCE, NORTHROP SERVICES, INC. NASA CONTRACTOR.

10. PLEASE OBTAIN NECESSARY OVERFLIGHT, LANDING AND STAGING CLEARANCES PLUS TWO WEEKS AND ADVISE WHAT AIRPORT LANDING FEES, IF ANY, REQUIRED FOR GOVERNMENT AIRCRAFT. ALSO, PERMISSION TO REFUEL AND REMAIN OVERNIGHT REQUIRED BOTH COUNTRIES.

11. REQUEST ASSISTANCE CUSTOMS CLEARANCE FOR AIRCRAFT AND CONTENTS AND, IF NECESSARY, COMMERCIAL SHIPMENT SUPPLIES AND SPARE PARTS.

12. FOR MEXICO: COULD BE POSSIBLE FOR ONE GOM REPRESENTATIVE TO FLY WITH CREW FROM GUADALAJARA TO PHOENIX (RETURNING COMMERCIAL AIR), HOWEVER FLIGHT WOULD BE UNCLASSIFIED

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UNCOMFORTABLE DUE TO SMALL SIZE AND CRAMPED CONDITION OF AIRCRAFT, BUT IF DESIRED, GOM REPRESENTATIVE CORDIALLY INVITED. KISSINGER

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